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Attitude and utilisation of preconception care services among pregnant women in Ghana

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ABSTRACT: Preconception care offers a crucial opportunity for early interventions and the detection of risk factors linked to adverse pregnancy and birth outcomes. Preconception care services remain underdeveloped and lack widespread adoption globally. This study assessed the attitude and utilisation of preconception care services among pregnant women attending antenatal care services at the Baptist Medical Centre. A facility-based cross-sectional study was conducted among 325 pregnant women attending antenatal care services at the Baptist Medical Centre. Data were collected using questionnaires and analysed with the Statistical Package for the Social Sciences version 23. A significant proportion of participants strongly agreed that it was necessary to seek preconception care services before pregnancy. However, preconception care services utilisation remained low among participants, with more than two-thirds of them not seeking preconception consultations at health facilities. Nonetheless, a higher educational level was strongly associated with better utilisation of preconception care services among participants. The study highlights low utilisation of preconception care services among pregnant women, despite their positive attitude toward the services. The East Mamprusi Municipal Health Directorate should implement strategies to enhance women's utilisation of preconception care services to increase service uptake.

Keywords: Antenatal care, Baptist Medical Centre, birth outcome, maternal health, neonatal health, pregnancy.

INTRODUCTION

Preconception care (PCC) refers to a set of biomedical, behavioural, and social health interventions offered to women and couples before conception to improve pregnancy outcomes and promote maternal and child health (Woldeyohannes *et al.,* 2023). It focuses on optimising health prior to conception and between pregnancies by addressing preventable risk factors that could adversely affect future pregnancies (Woldeyohannes *et al.,* 2023). According to the World Health Organisation (2024), preconception care involves the provision of targeted biomedical, behavioural, and social health interventions to women and couples before conception and between pregnancies with the aim of reducing maternal and childhood morbidity and mortality. It comprises the care provided to women and couples before their first pregnancy and the care offered between subsequent pregnancies, with the goal of optimising health and improving pregnancy outcomes (World Health Organisation, 2024; Aynalem *et al.,* 2025).

Preconception care provides a golden opportunity for interventions and early detection of risk factors associated with adverse pregnancy and birth outcomes, enabling improved maternal and neonatal health (Aynalem *et al.,* 2025). Due to this, PCC in recent times has been considered very necessary for improving maternal and child health (Aynalem *et al.,* 2025). Even though preconception care is beneficial in maternal, fetal and neonatal health, preconception care services (PCCS)

have not been able to be established very well and have failed to gain popularity globally (Gamshe and Demissie, 2022). However, some developed and developing countries have already started PCCS (Gamshe and Demissie, 2022).

Most women are not aware and do not have good knowledge about PCCS in Africa (Sardasht and Keramat, 2020). It has been revealed that there is a low level of knowledge of preconception care among non-healthcare working women in Sub-Saharan Africa (Ukoha *et al.,* 2022). More recent evidence from Nigeria suggests that although willingness and perception regarding PCC are generally positive, actual awareness and utilisation remain low. For example, in Oyo State, only 32.8% of women were aware of PCC services, though 84.7% expressed willingness to use them (Uchendu *et al.,* 2025). In Zaria, nearly 60% of antenatal clinic attendees were aware of PCC, but less than half had benefited from any of its components (Kachiro *et al.,* 2022). Similarly, less than half (40%) Ethiopian women reported that they had ever utilised PCCS (Girma *et al.,* 2023). A study conducted in Ghana by Beyuo *et al.* (2022) showed that 71.7% of pregnant women attending ANC at Korle-Bu Teaching Hospital were not aware of PCCS, 76.7% of them had poor knowledge about PCCS, and only 15% of the study participants utilised PCCS. Pregnant women attending the Antenatal clinic in Tamale West Hospital were reported to have a low level of awareness, poor knowledge and a negative attitude towards PCCS (Boakye-Yiadom *et al.,* 2020). Though few studies have been conducted in the Northern region of Ghana on preconception care services, little research has been done on this subject matter among pregnant women in the North East region of Ghana. Therefore, this study assessed the attitude and utilisation of preconception care services among pregnant women receiving antenatal clinic (ANC) services at the Baptist Medical Centre (BMC). It was revealed that PCCS utilisation remained low among participants, with more than two-thirds of them not seeking preconception consultations at health facilities.

METHODOLOGY

Research design

This study used facility-based cross-sectional design in assessing the attitude and utilization of preconception care services among 325 pregnant women receiving ANC services at BMC in Nalerigu (Baptist Medical Centre, 2021).

Population of the study

The population for this study were pregnant women in the East Mamprusi Municipality attending ANC sessions at BMC from January 2023 to September 2023, and they were 1,738.

Sample size determination

Yamane's (1973) formula was used to determine the sample size.

$n=N/1+N\ (e)^2$

Where: n = Sample size, N= Population size (1,738), e= Margin of error, (0.05)

$n = 1738/1+1738\ (0.05)^2$

n = 325

Sampling technique

The lottery method of simple random sampling was used to select 325 out of 1,738 pregnant women receiving ANC services at BMC, as registered in their ANC record book.

Inclusion and exclusion criteria

The study included only pregnant women who were attending ANC sessions at BMC in Nalerigu from January 2023 to September 2023. Pregnant women who were receiving services at the outpatient department were excluded.

Data collection instrument

Questionnaires were administered to the participants. The questionnaire was structured into five sections: Sections A, B, C, D, and E. Section A consisted of the socio-demographic characteristics of participants such as sex, age, occupation, marital status and educational level. Section B consisted of questions that elicited respondents' obstetric information, and Section C focused on questions that examined the knowledge of study participants about preconception care services. Section D involved questions that elicited participants' attitudes towards preconception care services, and Section E had questions that assessed the utilisation of preconception care services.

Pre-testing of the instrument

In order to ensure the validity and reliability of the questionnaire, it was pre-tested among pregnant women at Walewale hospital. Errors identified in the instrument were corrected before the actual data collection.

Data collection process

The principal researcher trained two research assistants

who assisted in the data collection. Participants who could read were allowed to self-administer the questionnaire. However, the questionnaire was read, explained and interpreted in the local language (Mampruli) for the study participants who could not read and write.

Data processing and analysis

Data was entered, cleaned and analysed using Statistical Package for the Social Sciences (SPSS) version 23. Descriptive analysis, such as frequencies, percentages, and means, was conducted among the variables. Chi-square tests were used to examine associations between categorical variables at a significance level of $p < 0.05$.

Ethical issues

In relation to ethical clearance, the research proposal was submitted to the University for Development Studies (UDS) ethical review committee board for consideration. After a review of the research proposal, ethical approval with the reference number UDS/RB/235/24 was issued before the commencement of data collection. Verbal consent was sought from the participants, which was based on their decision to willingly participate and had the right to opt out of the study at any point in time without being obliged to continue. Personal identifiable data such as names, contact numbers, physical characteristics, photos, videos and addresses were not collected from study participants.

RESULTS

Socio-demographic characteristics of participants

Table 1 shows the socio-demographic characteristics of participants. The majority of the participants (22.1%) were aged between 25 and 29 years. Most of the respondents were married (88.6%), while a few of them were single (3.7%). Most of the participants (76.9%) had some level of formal education. More than half of the participants (56.3%) were Muslims, followed by Christians (43.1%), and very few of them (0.6%) practised African Traditional Religion. Regarding employment, 46.5% were unemployed, 40.9% were self-employed, and 12.6% were government workers (Table 1).

Table 1. Socio-demographic characteristics of participants.

Variable	Frequency	Percentage
Ages groups		
15-19	49	15.1
19-24	66	20.3
25-29	72	22.1
30-34	66	20.3
35-39	50	15.4
40-44	22	6.8
Marital Status		
Married	288	88.6
Co-Habiting	25	7.7
Single	12	3.7
Level of Education		
Tertiary	67	20.6
SHS/Technical/Vocational	107	32.9
JSS	54	16.6
Primary	22	6.8
None	75	23.1
Religion		
Muslim	183	56.3
Christian	140	43.1
Others	2	0.6
Occupation		
Government worker	41	12.6
Self-employed	133	40.9
Unemployed	151	46.5

Attitude of participants towards preconception care services

The results in Table 2 indicate the attitude of participants towards preconception care services. The findings showed that the majority of participants (63.7%) agreed on the importance of preconception care services during reproductive age. Most participants (58.2%) agreed that preconception care services had a positive impact on pregnancy. Additionally, more than half of the participants (55.7%) strongly agreed that it was necessary to seek PCCS before pregnancy. An overwhelming majority of participants (92%) agreed that health facilities are the best places to seek PCCS (Table 2).

Association between socio-economic factors and attitude towards preconception care services of participants

Table 3 shows the association between socio-economic factors and attitude towards preconception care services of participants. The analysis revealed a statistically significant association between age and attitude towards preconception care services ($\chi^2 = 13.1$, $p = 0.023$). Participants aged 25-29 years (28.3%) exhibited the highest negative attitudes towards preconception care services. However, participants aged 30-34 years (22.3%) were those who had the highest positive attitude towards

Table 2. Attitude of participants towards preconception care services.

Variables	Frequency	Percentage (%)
Preconception care is important during reproductive age		
Agree	207	63.7
Strongly agree	102	31.4
Neutral	10	3.1
Disagree	5	1.5
Strongly disagree	1	0.3
Preconception care has positive impact on healthy pregnancy and birth outcomes		
Agree	189	58.2
Strongly agree	116	35.7
Neutral	18	5.5
Disagree	2	0.6
Strongly disagree	0	0.0
It is necessary for you to seek preconception care services before you become pregnant		
Agree	98	30.2
Strongly agree	181	55.7
Neutral	40	12.3
Disagree	6	1.8
Strongly disagree	0	0.0
Health facilities are the best places to seek preconception services		
Agree	299	92.0
Strongly agree	7	2.2
Not sure	16	4.9
Disagree	3	0.9
Strongly disagree	0	0.0

preconception care services (Table 3).

A significant association was also observed between occupation and attitude towards preconception care services ($\chi^2 = 13.5$, $p = 0.001$). The majority of the unemployed participants (65.0%) showed a negative attitude towards preconception care services, whereas less than half of those who were self-employed (42.6%) had a positive attitude (Table 3).

Utilisation of preconception care services by participants

The results in Table 4 indicate the utilisation of preconception care services by participants. More than two-thirds of the participants (88%) did not seek preconception consultations at health facilities, suggesting low utilisation of healthcare services for preconception planning. A significant proportion of participants (71.7%) reported not consuming folic acid prior to pregnancy. Regarding HIV screening, the majority of the participants (79.7%) did not undergo any HIV screening prior to pregnancy, pointing to a major gap in preconception health practices. Also, more than half of the participants (55.7%) did not do any hepatitis B screening before pregnancy (Table 4).

In terms of genetic health, most of the participants (78.8%) had not checked their sickling status. This suggests limited awareness or prioritisation of genetic screening as part of preconception care. More than half of the participants (57.2%) did not use any contraceptive methods while planning for their pregnancies (Table 4).

Association between socio-economic factors and utilisation of preconception care services by participants

Table 5 shows the association between socio-economic factors and utilisation of preconception care services by participants. The study revealed a statistically significant

Table 3. Association between socio-economic factors and attitude towards preconception care services of participants.

Variables	Level of attitude		χ^2 (p-value)
	Negative	Positive	
Age			
15-19	14 (23.3)	35 (13.2)	
19-24	14 (23.3)	52 (19.6)	
25-29	17 (28.3)	55 (20.8)	13.1 (0.023)
30-34	7 (11.7)	59 (22.3)	
35-39	3 (5.0)	47 (17.7)	
40-44	5 (8.3)	17 (6.4)	
Marital status			
Married	52 (86.7)	236 (89.0)	
Co-Habiting	7 (11.7)	18 (6.8)	23.1 (0.307)
Single	1 (1.7)	11 (4.2)	
Level of Education			
Tertiary	5 (8.3)	62 (23.4)	
SHS/Technical/Voc.	21 (35.0)	86 (32.5)	
JSS	11 (18.3)	43 (16.2)	8.6 (0.071)
Primary	7 (11.7)	15 (5.7)	
None	16 (27.7)	59 (22.3)	
Religion			
Muslim	34 (56.7)	149 (56.2)	
Christian	26 (43.3)	114 (43.0)	0.46 (0.796)
Others	0 (0.0)	2 (0.8)	
Occupation			
Government worker	1 (1.7)	40 (15.1)	
Self-employed	20 (33.3)	113 (42.6)	13.5 (0.001*)
Unemployed	39 (65.0)	112 (42.3)	

Note: *p<0.05.

association between the educational level and utilisation of preconception care services of participants (χ^2 = 71.4, p = 0.000). Participants with tertiary education had the highest proportion of good utilisation (13.2%), while those with no formal education demonstrated the highest percentage of poor utilisation (37.1%). A significant association was also observed between occupation and utilisation of preconception care services of participants (χ^2 = 79.9, p = 0.000). The majority of participants (51.5%), who were unemployed, had poor utilisation of preconception care services (Table 5).

DISCUSSION

More than half of the participants (55.7%) strongly agreed that it was necessary to seek preconception care services before pregnancy. Additionally, an overwhelming majority of participants (92%) agreed that health facilities are the best places to seek PCCS. These findings align with studies conducted in Malaysia (Mukhali *et al.,* 2022), Nepal (Khanal, 2020) and Saudi Arabia (Edris *et al.,* 2024), where participants had positive attitudes toward PCCS. However, this current study varies from some studies in Ghana. For instance, Boakye-Yiadom et al. (2020) found that only 20% of participants had positive attitudes toward PCCS at Tamale West Hospital in Ghana. Also, Beyuo *et al.* (2022) reported 39.2% positive attitudes of participants toward PCCS at Korle Bu Teaching Hospital.

This study revealed a statistically significant association between occupation and attitude towards PCCS (χ^2 = 13.5, p = 0.001). The majority of the unemployed participants (65.0%) showed a negative attitude towards PCCS, whereas less than half of those who were self-employed (42.6%) had a positive attitude. These results align with Adeyemo *et al.* (2021) who found that employment status

Table 4. Utilization of preconception care services by participants.

Variables	Frequency	Percentage
Have you visited the health facility at least once to enquire about preconception?		
Yes	39	12.0
No	286	88.0
Not sure	0	0.0
Have you consumed folic acid supplementation before becoming pregnant?		
Yes	92	28.3
No	233	71.7
Not sure	0	0.0
Have you screened for HIV at least once before becoming pregnant?		
Yes	67	20.6
No	258	79.4
Not sure	0	0.0
Have you screened for hepatitis B while planning to become pregnant?		
Yes	137	42.2
No	181	55.7
Not sure	7	2.2
Have you made an effort to know your sickling status while planning for pregnancy?		
Yes	69	21.2
No	256	78.8
Not sure	0	0.0
Have you used a contraceptive method to delay pregnancy while planning?		
Yes	139	42.8
No	186	57.2
Not sure	0	0.0

was linked to greater access to health information and financial resources, fostering more favourable perceptions of PCCS.

The study discovered that an overwhelming majority of participants (88%) did not seek preconception consultations at health facilities. This finding confirms Gamshe and Demissie (2022) study in Ethiopia, which found extremely high non-utilisation of preconception consultations by participants (97.12%). In this study, over two-thirds of the participants (71.7%) did not consume folic acid prior to pregnancy. The low usage of folic acid could be due to limited awareness or a lack of emphasis on folic acid supplementation in preconception education programs. A majority of participants (79.7%) did not undergo HIV screening before pregnancy. This finding is in line with previous studies by Amaje *et al.* (2022) in Ethiopia (52.7%) and Nzelu *et al.* (2024) in Nigeria (63.3%). Regarding hepatitis B screening, over half of the participants (55.7%) did not screen before pregnancy. This confirms the Kwadzokpui *et al.* (2020) study in Ghana, which revealed that more than half of the participants (74%) did not do hepatitis B screening before pregnancy. This study found that most participants (78.8%) had not checked their sickling status before pregnancy. The limited uptake of genetic screening services in this study may be attributed to low awareness, limited availability of genetic testing, or a lack of emphasis on preconception genetic counselling within the local health system. In terms of contraceptive use while planning pregnancy, more than half (57.2%) of the participants did not use any contraceptive method while planning for pregnancy. This finding supports Boakye-Yiadom *et al.* (2020) study in Ghana, which found that the majority of participants (70%) did not use contraceptives before pregnancy.

A statistically significant association was identified between educational level and PCCS utilisation ($\chi^2 = 71.4$, $p = 0.000$). Participants with tertiary education exhibited the highest utilisation (13.2%). These findings are in line with studies from Ethiopia (Habte et al., 2021) and Iran (Sardasht and Keramat, 2020), where higher educational levels positively influenced PCCS utilisation. Similarly, occupation was significantly associated with PCCS utilisation ($\chi^2 = 79.9$, $p = 0.000$). The majority of participants (51.5%) who were unemployed had poor utilisation

Table 5. Association between socio-economic factors and utilization of preconception care services by participants.

Variables	Level of utilization		χ^2 (p-value)
	Poor	Good	
Age			
15-19	44 (16.5)	5 (8.5)	
19-24	55 (20.7)	11 (18.6)	
25-29	61 (22.9)	11 (18.6)	5.6 (0.349)
30-34	51 (19.2)	15 (25.4)	
35-39	37 (13.9)	13 (22.0)	
40-44	18 (6.8)	4 (6.8)	
Marital status			
Married	236 (88.7)	4 (6.8)	
Co-Habiting	22 (8.3)	52 (88.1)	2.5 (0.287)
Single	8 (3.0)	3 (5.1)	
Level of education			
Tertiary	32 (12.0)	35 (13.2)	
SHS/Technical/Voc.	90 (33.8)	17 (6.3)	
JSS	51 (19.2)	3 (1.1)	71.4 (0.000)*
Primary	21 (7.9)	1 (0.4)	
None	72 (37.1)	1 (1.1)	
Religion			
Muslim	149 (56.0)	34 (57.6)	
Christian	115 (43.2)	25 (42.4)	0.47 (0.789)
Others	2 (0.8)	0 (0.0)	
Occupation			
Government worker	13 (4.9)	28 (47.5)	
Self-employed	116 (43.6)	17 (28.8)	79.9 (0.000*)
Unemployed	137 (51.5)	14 (23.7)	

Note: *p<0.05.

of preconception care services. This finding aligns with Sardasht and Keramat (2020), who reported that employment status and income levels significantly impacted PCCS access.

Conclusion

A significant proportion of participants strongly agreed that it was necessary to seek PCCS before pregnancy. However, PCCS utilisation remained low among participants, with more than two-thirds of them not seeking preconception consultations at health facilities. It implies that study participants and their partners have not yet realised the key role of PCCS in childbearing.

Recommendation

These findings underscore the need for targeted interventions to enhance attitude and increase the utilisation of PCCS. Strengthening maternal health education and integrating PCCS into routine healthcare services could be pivotal in improving maternal and neonatal health outcomes.

Limitations of the study

The study was limited to pregnant women receiving ANC services at BMC in Nalerigu. Since it was a facility-based study, the results cannot be generalised. Also, there could be recall bias, which might affect data quality.

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COMPETING INTERESTS

The authors declare that there are no competing interests.

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